

CLAIMS

5 1. A scan test apparatus for testing printed circuit boards comprising:

an upper housing and a lower housing, each having a first drive roller and a second drive roller for movement of the printed circuit board with respect to the scan test apparatus;

10 a shorting matrix for electrically shorting the printed circuit board positioned on at least one of the upper housing or the lower housing, the shorting matrix having a leading edge and a trailing edge; and

15 an electrical contactor positioned on at least one of the upper housing or the lower housing adjacent the leading edge of the shorting matrix and adjacent the trailing edge of the shorting matrix;

wherein the electrical contactors transmit test signals from the printed circuit board to measurement electronics.

20 2. The scan test apparatus of claim 1 wherein a shorting matrix is positioned on both the upper housing and the lower housing and there is an electrical contactor adjacent the leading edge and the trailing edge of each shorting matrix.

25 3. The scan test apparatus of claim 1 further comprising an actuator connected to one of the upper housing or the lower housing to bias the upper housing and the lower housing toward one another.

30 4. The scan test apparatus of claim 1 further comprising mounting chucks for maintaining the printed circuit board in a stationary position.

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5 5. The scan test apparatus of claim 4 further comprising rigid rails for the drive rollers to move the scan test apparatus across a surface of the stationary printed circuit board.

6. A scan test apparatus for testing a printed circuit board comprising:

10 a motion unit for moving the scan test apparatus with respect to the printed circuit board;

a shorting matrix connected to the motion unit;

a first electrical contactor connected to the motion unit and positioned on one side of the shorting matrix;

15 a second electrical contactor connected to the motion unit on an opposite side of the shorting matrix; and

a mounting plate opposite the shorting matrix and electrical contactors for supporting the printed circuit board.

20 7. The scan test apparatus of claim 6 wherein the motion unit is a housing and drive rollers.

8. The scan test apparatus of claim 6 wherein the motion unit is a linear motor.

25 9. A scan test apparatus for testing printed circuit boards comprising:

a motion unit;

a charge rise time contactor connected to the motion unit; and

30 means for mounting the printed circuit board.

10. The scan test apparatus of claim 9 wherein the motion unit is an upper housing and drive rollers and the means for mounting the printed circuit board is a vacuum plate.

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17. A scan test apparatus for testing printed circuit boards comprising:

5 an upper housing and a lower housing, each having means for moving the printed circuit board with respect to the scan test apparatus;

a shorting matrix positioned on at least one of the upper housing and the lower housing;

10 at least one non-contact sensor positioned on at least one of the upper housing and the lower housing opposite the shorting matrix; and

means to bias the upper and lower housing toward each other.

15 18. The scan test apparatus of claim 17 wherein there is a shorting matrix positioned on both the upper and lower housings and there is a non-contact sensor located on each side of the shorting matrix on both the upper and lower housings.

20 19. The scan test apparatus of claim 17 wherein there is a shorting matrix positioned on both the upper housing and the lower housing, and there is one non-contact sensor positioned on each of the upper housing and the lower housing adjacent one
25 another.

20. The scan test apparatus of claim 17 wherein the means to bias the upper and lower housings is an actuator.

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